P.L.E.

Total mark scored

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MATHEMATICS

DO NOT WRITE YOUR SCHOOL/CENTRE NAME OR NUMBER ANYWHERE IN THIS BOOKLET

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READ THE INSTRUCTIONS BELOW CAREFULLY BEFORE USING THE ANSWER BOOKLET.

1. Confirm that this answer booklet has 8 pages. Do **not** accept an answer booklet with missing pages.
2. Do **not** fold, dismantle, tear and/or mishandle any part of the answer booklet. Folding, dismantling, tearing and/or any other form of mishandling of the answer booklet is a malpractice and shall lead to cancellation of results. All work must be handed in.
3. Use a blue or black ink ball pen. Work in pencil, other than graphs, maps and drawings, will **not** be marked.
4. Answer only the number of questions as instructed on the question paper. Answers to extra questions will **not** be marked.
5. Write your answers on both sides of each sheet.
6. Do your rough work in this answer booklet. Cross through any work you do not want marked.
7. Do **not** share your work with another candidate or expose your work such that another candidate can copy from it. Sharing or exposing your work shall lead to cancellation of results.
8. List the question numbers in the order attempted, in the left-hand column of the boxes opposite. Do **not** list the multiple choice questions.
9. Check that you have written your name, signature, random number and personal number on each page of the answer booklet(s) used. Tie all the booklets used together.

Question number attempted	For Examiners' use only	
	Mark	Examiners' Initials
Total		

Write the number of answer booklets you have used here. →

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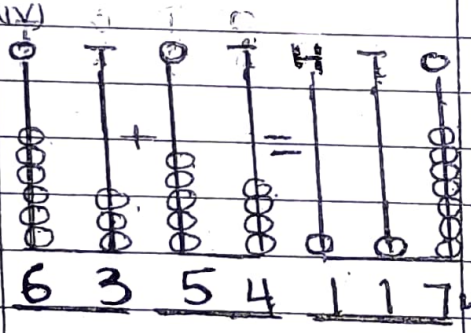
QN	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENTS
1	OPN	K	P.2	(i) 63 +54 117 ✓	B2	For 117
				(ii) 63+54 = 117 ✓		
				(iii) 60+3 50+4 110+7 117 ✓ (B2)		
				(iv)  6 3 5 4 1 1 7 ✓ (B2)		

Accept

63+54 117

Printed script

63+54 117

63 63
+54 54
117 117

Reject

Re Written

63+54117

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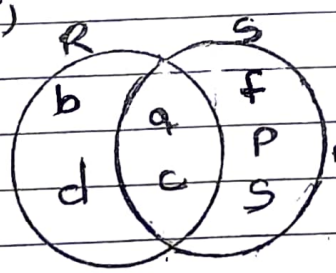
QN	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENTS
2	BINO	K	P.3	TH H T O 1 2 0 1 ✓	B2	For 1201 or 1201 ten.
3	SET CONS'	C	P.5	(i) R = {a, b, c, d} ✓ S = {a, f, p, c, s} ✓ RUS = {a, b, c, d, f, p, s} ✓ n(RUS) = 7 ✓	B1	for identifying members of RUS correctly.
				(ii)  	B1	For n(RUS) = 7
				n(RUS) = 7 ✓ (B1)		n(RUS) = Seven ✓ (B1)
				Accept n(RUS) = {a, b, c, d, f, p, s} = 7 ✓(B1) ✓(B1)		Accept (i) {a, b, c, d, f, p, s} n(RUS) = 7 B1 B1 (ii) {a b c d f p s} n(RUS) = 7 B1 B1 (iii) a, b, c, d, f, p, s n(RUS) = 7 ✓ B1 B1
				Accept (i) Seven members (ii) 7 elements.		Reject n(RUS) = {7} B0 B0

(2)

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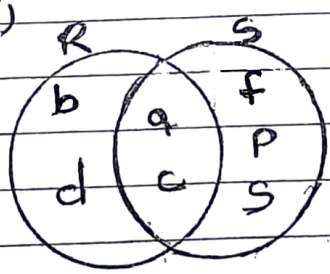
QN	TOPIC	L	CLASS	SOLUTION		COMMENTS
2	NUMBERS	K	P.3	TH H T O 1 2 0 1 ✓	B2	1 For 1201 or 1201 ten.
3	SET CONS'	C	P5	R = {a, b, c, d} S = {a, f, p, c, s} RUS = {a, b, c, d, f, p, s} ✓ n(RUS) = 7 ✓ (ii)  n(RUS) = 7 ✓ (B1)	B1 B1	for identifying members of RUS correctly For n(RUS) = 7 n(RUS) = Seven ✓ (B1)
				Accept n(RUS) = {a, b, c, d, f, p, s} = 7 ✓ (B1) ✓ (B1) Accept (i) Seven members (ii) 7 elements.		Accept (i) {a, b, c, d, f, p, s} n(RUS) = 7 B1 B1 (ii) {a b c d f p s} n(RUS) = 7 B1 B1 (iii) a, b, c, d, f, p, s n(RUS) = 7 ✓ B1 B1 Reject n(RUS) = {7} B0 B0

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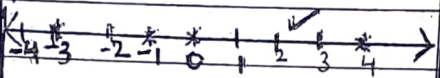
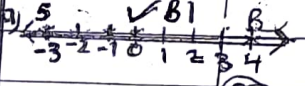
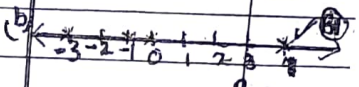
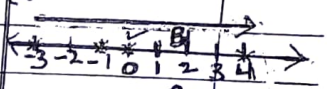
QN	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENTS
4	INTEGERS	C	P.5	(i) 	B1	For correct working.
				Ascending order		
				-3, -1, 0, 4 ✓	B1	For correct order.
				(ii) -3, -1, 0, 4 ✓ (B1) (B1)		
						Accept
						(a)  B1 B1 (B0)
						(b)  B1 B0
						(c)  B1 B0
						(d) {-3, -1, 0, 4} B1 B1 Condone the curly brackets.
5	INTEGERS	C	P.7	(iii) M T W T F S S		
				1 2 3 4 5 ✓	M1	For correct working.
				6 7 8 9 10 11 12		
				13 14 15 16 17 18 19		
				20 21 22 23 24 25 26		
				27 28 29 (30)		
				Thursday	A1	For Thursday.

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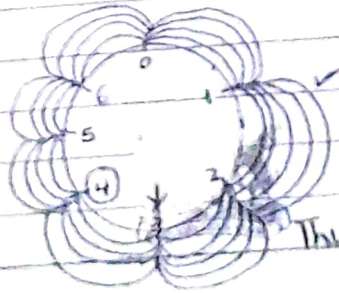
(iii) 3 rep. Wednesday
$3+(30-1) = —$ (finite 7) ✓ M1
$3+29 = —$ (finite 7)
$\frac{32}{7} = 4$ rem. 4
4 rep. Thursday ✓ A1

(iii) 2 rep. Tuesday
$2+30 = —$ (finite 7) ✓ M1
$\frac{32}{7} = 4$ rem. 4
4 rep. Thursday ✓ A1

(iv) 3 rep. Wednesday
$3+(30-1) = —$ (finite 7) ✓ M1
$3+29 = —$ (finite 7)
$\frac{29}{7} = 4$ rem 1
$3+1 = 4$ finite 7
4 rep. Thursday ✓ A1

(v) $\frac{30}{7} = 4$ rem. 2
Wed (1) Thur (2) ✓ M1
Thursday ✓ A1

(vi) $30-1 = 29$



✓ M1
Thursday ✓ A1

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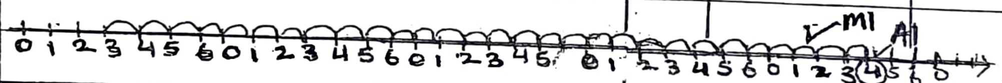
Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENTS
				(vii) 3+30 = ___ (finite 7)		
				$\frac{33}{7}$ = 4 rem 5		
				5−1 ✓ = 4 (finite 7) (M1)		
				4 rep. Thursday ✓ (A1)		
				(viii) 30−1 = 29 ✓ (M1)		
				$\frac{29}{7}$ = 4 rem 1		
				3+1 = 4 (finite 7)		
				4 rep. Thursday ✓ (A1)		
				(ix) 		
6	LMC	C	P.5	(i) 1000 ml = 1 litre		
				1 ml = $\frac{1}{1000}$ Litre.		
				750 ml = $\frac{1}{1000}$ × 750 L ✓	M1	For correct working
				= $\frac{75}{100}$ L		
				= 0.75 L ✓	A1	For 0.75L or $\frac{75}{100}$L or $\frac{3}{4}$L or $\frac{15}{20}$L or $\frac{750}{1000}$L M1 A1
				(ii) KL HL DL L dl cl ml		
				0 . 7 5 0		
				750 ml = 0.75 litres		

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
7	OPM	C	P.7	(i) $4^2+3^2\times9^0$ $(4\times4)+(3\times3)\times1$ $16+(9\times1)$ ✓ $16+9$ 25 ✓	M1 A1	For simplifying powers For 25
				(ii) $4^2+3^2\times9^0$ $16+9\times1$ ✓ (M1) 25 ✓ (A1)		Reject $4^2+3^2\times9^0$ $16+9$ M0 25 A0
8	TIME	C	P.7	(i) 1:20 +12 00h 13 20 h		
				13 20 − 2 15 ✓ 11:05am or 11 05 h ✓	M1 A1	For Subtraction For 11:05 am or 11 05 hrs
				(ii) 1:20 pm +12 00 h 13 20 h		Accept 11:05
				13 20 ✓ − 2 15 11 05 h ✓ (M1) (A1)		Reject 11:05 pm
				(iii) ~~Local Language~~ 7:20 − 2:15 ✓ (M1) 5:05 11:05 ✓ (A1)		

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
7	OPNI	C	P.7	(i) $4^2 + 3^2 \times 9^0$ $(4\times4)+(3\times3)\times1$ $16+(9\times1)$ ✓ $16+9$ 25 ✓	M1 A1	For simplifying powers For 25
				(ii) $4^2+3^2\times9^0$ $16+9\times1$ ✓ (M1) 25 ✓ (A1)		Reject $4^2+3^2\times9^0$ Mo $16+9$ Mo 25 Ao
8	TIME	C	P.7	(i) 1:20 +12 00 h 13 20 h 13 20 − 2 15 ✓ 11:05 am or 11 05 h ✓	M1 A1	For subtraction For 11:05 am or 11 05 hrs Accept 11:05
				(ii) 1:20 pm +12 00 h 13 20 h 13 20 ✓ − 2 15 11 05 h ✓ (M1) (A1)		Reject 11:05 pm
				(iii) Local Language 7:20 − 2:15 ✓ (M1) 5:05 11:05 ✓ (A1)		

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMEN

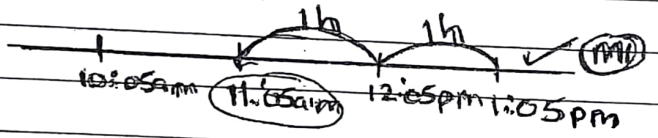
(iv) E.T – minutes for duration

H Min

1 : 20 pm
− 15
1 05

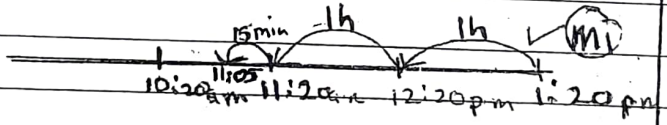
Subtraction of minutes

Subtraction of 2 hours



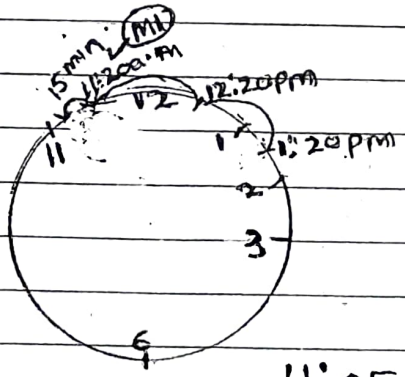
11 : 05 am ✓ (A1)

(v)



11 : 20
− 15
11 : 05 am ✓ (A1)

(vi)



11 : 05 am ✓ (A1)

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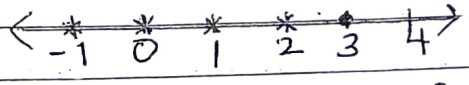
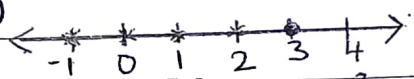
Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
9	ALGEBRA	C	P.7	(i) $P \leq 3$  $P = \{3, 2, 1, 0, -1, \ldots\}$ ✓	B2	For the correct solution set with ~~at least~~ two elements in the correct direction.
				(ii)  $P = \{\ldots -1, 0, 1, 2, 3\}$ ✓ (B2)		
				(iii) $P = \{3, 2, 1, 0, -1, -2 \ldots\}$ ✓ (B2)		
10	Patterns and seq.	C	P.7	(i) 1, 8, 27, 64, 125 ✓ $1\times1\times1$ $2\times2\times2$ $3\times3\times3$ $4\times4\times4$ $5\times5\times5$ ✓	B1 B1	For the correct pattern For 125
				(ii) 1, 8, 27, 64, 125 ✓ (B1) 1^3 2^3 3^3 4^3 5^3 ✓ (B1)		
				(iii) 1, 8, 27, 64, 125 ✓ (B1)(B1) (Cube numbers)		
				(iv) 1, 8, 27, 64, 125 ✓ B1 B(1ow-1)		
11	Nos	C	P.7	(i) Base | No | 3 | 14 | R 3 | 4 | 2 ↑ ✓ | 1 | 1 $= 112$ ✓ three	M1 A1	For correct working For 112 three

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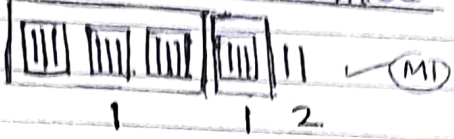
Qn	TOPIC	L	CLASS	SOLUTION	MARK	COMMENT
				(iii) Base | No | Rem. 3 | 14 | 2 ✓ M1 3 | 4 | 1 | | | $= 112_{three}$ ✓ A1		Accept 112_3 112
				(iii) $14 \div 3 = 4$ r 2 $4 \div 3 = 1$ r 1 ✓ M1 $14_{ten} = 112_{three}$ ✓ A1		
				(iv)  1 1 2 ✓ M1 $= 112_{three}$ ✓ A1		
				(v) B | N | R 3 | 14 | 2 3 | 4 | 1 ✓ M1 3 | 1 | 1 | 0 | ↑ $= 112_{three}$ ✓ A1		
12	Data Handling	C	P6	2 mangoes cost Shs 2000 ✓ 3 oranges cost Shs 1500 Shs 3500 ✓	M1 For Correct Working. A1 For Shs. 3500 Accept 3500 Reject Wrong Units	

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
13	Patterns and Seq.	C	P	(i) M9={9, 18, 27, 36...}		
				7+8+t = 18 ✓	M1	For correct working.
				15+t = 18		
				15−15+t = 18−15		
				t = 3 ✓	A1	For 3
				(ii) 7+8+t = 9 ✓ (M1)		
				t+15 = 9		
				t+1+5 = 9		
				t+6 = 9		
				t+6−6 = 9−6		
				t = 3 ✓ (A1)		
				(iii)		
				7+8+0 = 15		
				7+8+1 = 16		
				7+8+2 = 17		
				7+8+[3] ✓ = 18 ✓ M1 A1		
				7+8+4 = 19		
				t = 3		
				(iv) ~~8 r6t~~ 78t ✓ (M1) ÷ 9 — 09, 18, 27		
				36, t=3 (A1) — 45, 54, 63, 72, 81, 90		

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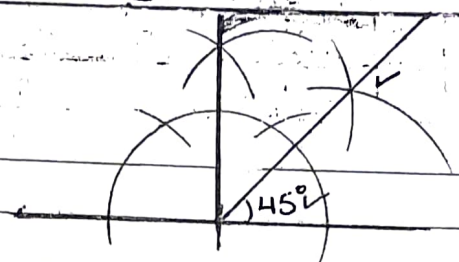
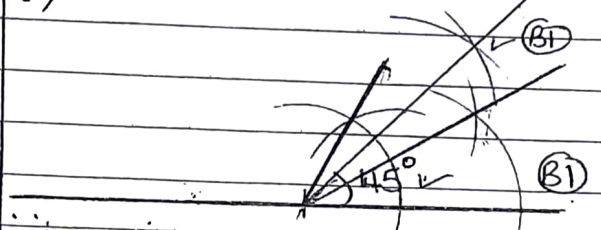
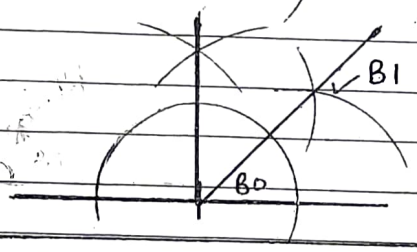
Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
14	LAG	A	P.6	(i) 	B1	For the arcs leading to 45°
				(ii) 	B1	For identifying 45°
				(iii) 		
15	Alg.	C	P.6	$5q - 2r - 3q - r$ $5q - 3q - 2r - r$ ✓ $2q - 3r$ ✓	M1 A1	For collection of like terms For $2q - 3r$ or $-3r + 2q$ ✓
16	Data Handl.	C	P.5	Average = $\frac{\text{Sum of items}}{\text{No. of items}}$ $= \frac{62+73+78}{3}$ ✓ $= \frac{135+78}{3}$ $= \frac{213}{3}$ $= 71$ eggs ✓	M11 A1	For correct working. Accept 71 For 71 eggs.

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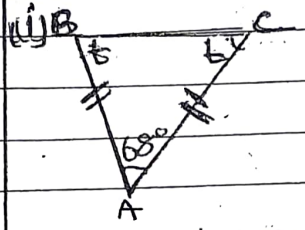
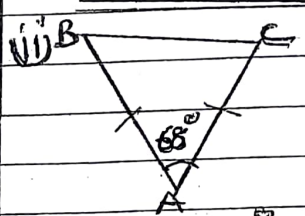
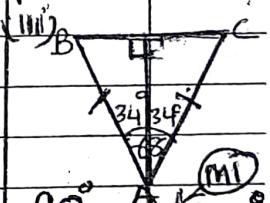
Qn	TOPIC	L	CLASS	COMMENT	AWARD	COMMENT
17	Money	C	P.5	Selling price = B.P − Loss Sh. 45000 − Sh. 1500 ✓ Sh. 43500 ✓	M1 A1	For subtraction For Sh. 43,500
18	LAG	C		(i) 		
				Let angle B be t $\angle B = \angle C = t$ $t + t + 68^\circ = 180^\circ$ ✓ $2t + 68^\circ - 68^\circ = 180^\circ - 68^\circ$ $2t = 112^\circ$ $\frac{2t}{2} = \frac{112^\circ}{2}$ $t = 56^\circ$ $\angle ABC = 56^\circ$ ✓	M1 A1	For formation of equation. For 56° Accept 56
				(ii) 		
				$180^\circ - 68^\circ = 112^\circ$ ✓ B1 for 112° $\frac{112^\circ}{2} = 56^\circ$ $\angle ABC = 56^\circ$ ✓ B1 for 56°		
				(iii) 		
				$90^\circ - 34^\circ = 56^\circ$ $\angle ABC = 56^\circ$ ✓ (iv) $180^\circ - 68^\circ$ $90^\circ - 34^\circ$ ✓ $= 56^\circ$ ✓	M1 A1	

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Qn	Comp	L	Curr	SOLUTION	Award	Comment
19	Lmc	C	P6	(i) $2\pi r = C$		
				$2 \times \frac{22}{7} \times r = 88cm$ ✓	M1	For correct substitution
				$\frac{44}{7} r = 88cm$		
				$7 \times \frac{44}{7} r = 88cm \times 7$		
				$\frac{44r}{44} = \frac{88cm \times 7}{44}$		
				$r = 14cm$ ✓	A1	For 14 cm. Accept 14
				(ii) $\pi D = C$		
				$\frac{22}{7} \times D = 88cm$		
				$\frac{22}{7} D = 88cm$		
				$7 \times \frac{22}{7} D = 88cm \times 7$		
				$\frac{22D}{22} = \frac{88cm \times 7}{22}$		
				$D = 28$ ✓	B1	For 28
				$2R = D$		
				$2R = 28$		
				$\frac{2R}{2} = \frac{28}{2}$		
				$R = 14cm$ ✓	B1	For 14

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
19	Lmc	C	P.6	(i) $2\pi r = C$		
				$2 \times \frac{22}{7} \times r = 88\,cm$ ✓	M1	For Correct Substitution
				$\frac{44}{7} r = 88\,cm$		
				$\frac{1}{7} \times \frac{44}{7} r = 88cm \times 7$		
				$\frac{44r}{44} = \frac{88cm \times 7}{44}$		
				$r = 14\,cm$ ✓	A1	For 14 cm Accept 14
				(ii) $\pi D = C$		
				$\frac{22}{7} \times D = 88cm$		
				$\frac{22D}{7} = 88cm$		
				$\frac{7}{1} \times \frac{22D}{7} = 88cm \times 7$		
				$\frac{22D}{22} = \frac{4}{88cm \times 7}{22}$		
				$D = 28$ ✓	B1	For 28
				$2R = D$		
				$\frac{2R}{2} = \frac{28}{2}$		
				$R = 14\,cm$ ✓	B1	For 14

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Qn	TOPIC	L	CLASS	SOLUTION	ANSWER	COMMENT
20	Fract	C	P.6	(i)		

5	25	20
5	5	4
2	1	4
2	1	2
	1	1

$5 \times 5 \times 2 \times 2 = 100$

$\frac{20}{25_1} \times \frac{4}{100} = 80$ ✓

$\frac{18}{20} \times \frac{4}{100} = 90$ ✓

The second test. ✓

B1 For either 80 or 90, 80% or 90%, 8 or 9, or 8 or 09 from correct working.

(ii) $\frac{20}{25} \times \frac{4}{100}\% = 80\%$ ✓

$\frac{18}{20} \times \frac{5}{100}\% = 90\%$ ✓ (B1)

The second test. ✓ (B1)

B1 For second test when both are correct.

(iii) $\frac{20 \times 4}{25 \times 4} = \frac{80}{100}$ ✓

$\frac{18 \times 5}{20 \times 5} = \frac{90}{100}$ ✓ (B1)

The second test. ✓ (B1)

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Qn	Topic	L	Class	Solution	Award	Comment
2(a)	Fract	C	P.6	$\frac{1}{2}-\frac{1}{4}\div\frac{4}{5}$		
				$=\frac{1}{2}-\left(\frac{1}{4}\div\frac{4}{5}\right)$		
				$=\frac{1}{2}-\left(\frac{1}{4}\times\frac{5}{4}\right)$ ✓		
				$=\frac{1}{2}-\frac{5}{16}$	M1	For recipr
				$=\frac{(8\times1)-(1\times5)}{16}$		
				$=\frac{8-5}{16}$ ✓	M1	For Subtraction
				$=\frac{3}{16}$ ✓	A1	For $\frac{3}{16}$
(b)				(i) $0.27\times1.2\div0.9$		
				$\frac{27}{100}\times\frac{12}{10}\div\frac{9}{10}$ ✓	M1	For correc working.
				$=\frac{27}{100}\times\frac{12}{10}\times\frac{10}{9}$		
				$=\frac{36}{100}$		
				$=0.36$ ✓	A1	For 0.36 Accept $\frac{36}{100}$
				(ii) $\frac{0.27\times1.2\times1000}{0.9\times1000}$ ✓ M1		
				$=\frac{27\times12}{900}$		
				$=\frac{36}{100}$		
				$=0.36$ A1		

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
2(a)	Fract	C	P.6	$\frac{1}{2}-\frac{1}{4}\div\frac{4}{5}$		
				$=\frac{1}{2}-\left(\frac{1}{4}\div\frac{4}{5}\right)$		
				$=\frac{1}{2}-\left(\frac{1}{4}\times\frac{5}{4}\right)$ ✓		
				$=\frac{1}{2}-\frac{5}{16}$	M1	For recipr
				$=\frac{(8\times1)-(1\times5)}{16}$		
				$=\frac{8-5}{16}$ ✓	M1	For Subtraction
				$=\frac{3}{16}$ ✓	A1	For $\frac{3}{16}$
(b)				(i) $0.27\times1.2\div0.9$		
				$\frac{27}{100}\times\frac{12}{10}\div\frac{9}{10}$ ✓	M1	For correc working.
				$=\frac{27}{100}\times\frac{12}{10}\times\frac{10}{9}$		
				$=\frac{36}{100}$		
				$=0.36$ ✓	A1	For 0.36 Accept $\frac{36}{100}$
				(ii) $\frac{0.27\times1.2\times1000}{0.9\times1000}$ ✓ (M1)		
				$=\frac{27\times12}{900}$		
				$=\frac{36}{100}$		
				$=0.36$ ✓ (A1)		

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QN	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
				(iii) $\frac{\overset{0.3}{\cancel{0.27}} \times 1.2}{\cancel{0.9}}$ ✓ (M1)		
				$= 0.3 \times 1.2$		
				$= \frac{3}{10} \times \frac{12}{10}$		
				$= \frac{36}{100}$		
				$= 0.36$ ✓ (A1)		
				(iv) 0.27×1.2: $054 + 027 = 0.324$		
				$0.324 \div 0.9$		
				$\frac{324}{100} \div \frac{9}{10}$ ✓ (M1)		
				$\frac{\overset{36}{\cancel{324}}}{100\cancel{0}} \times \frac{\cancel{10}}{\cancel{9}}$		
				$= \frac{36}{100}$		
				$= 0.36$ ✓ (A1)		

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENTS
22	DST	C	P.6	(i) Distance $1m = \frac{1}{1000}$ km $400m = \left(\frac{1}{1000} \times 400\right)$ km $= \frac{4}{10}$ km ✓	B1	For $\frac{400}{1000}$ km or $\frac{1}{120}$ km $\frac{25}{3000}$ km, $\frac{25}{1000}$ km
				Time 1 hour = 3600sec. 48sec. $= \frac{48}{3600}$ hours ✓	B1	For $\frac{48}{3600}$ hor $\frac{1}{3600}$ h or $\frac{3}{3600}$ h
				Speed $= D \div T$ $= \frac{4}{10}$ km $\div \frac{48}{3600}$ h ✓ $= \frac{4}{10} \times \frac{3600}{48}$ $= 30$ km/h ✓	M1 A1	for division For 30 km/h
				(ii) Speed $= \frac{D}{T}$ $= \frac{400m}{48sec}$ $= \frac{25}{3}$ m/sec.		
				Distance $1m = \frac{1}{1000}$ km $\frac{25}{3}m = \left(\frac{25}{3} \times \frac{1}{1000}\right)$ km $= \frac{25}{3000}$ km $= \frac{1}{120}$ km ✓ (B1)		
				Time: 1sec $= \frac{1}{3600}$ h ✓ (B1)		

(M1) Speed $= \frac{1}{120}$ km $\div \frac{1}{3600}$ h
$= \frac{1}{120} \times \frac{3600}{1}$
$= 30$ km/h ✓ (A1)

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENTS
				(iii) Speed $= \frac{25}{\frac{48}{3}}$ m/sec.		
				$= \frac{25}{3}$ m/sec.		
				Distance		
				$1m = \frac{1}{1000}$ km		
				$25m = \frac{25}{1000}$ km ✓	B1	
				Time		
				$1sec = \frac{1}{3600}$ h		
				$3sec = 3 \times \frac{1}{3600}$		
				$= \left(\frac{3}{3600}\right)$ h ✓	B1	
				Speed		
				$\frac{25}{1000} \div \frac{3}{3600}$ ✓	M1	
				$= \frac{25}{1000} \times \frac{3600}{3}$		
				$= 30$ km/h ✓	A1	
				(iv) 1 hour = 3600 sec.		
				1 km = 1000 m.		
				$\frac{400}{1000}$ ✓ B1 ; $\frac{48}{3600}$ ✓ B1	M1	
				$\frac{400}{1000} \times \frac{3600}{48}$		
				$= 30$ km/h ✓	A1	

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
24	Patt. and seq.	C	P.5	(i)		

2	126	90	72
3	63	45	36 ✓
3	21	15	12 ✓
	7	5	4

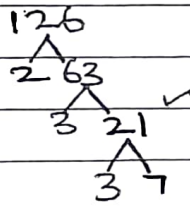
$2 \times 3 \times 3$ ✓

18 pupils ✓

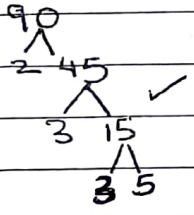
M1 For factorisation

M1 For identifaction of common factors

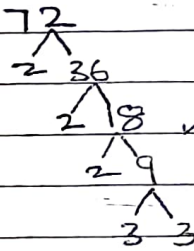
(ii)



$F126 = \{2_1, 3_1, 3_2\}$ (M1)



$F90 = \{2_1, 3_1, 3_2\}$



$F72 = \{2_1, 2_2, 2_3, 3_1, 3_2\}$

$2 \times 3 \times 3$ ✓ (M1)

$= 18$ pupils (A1)

A1 For 18

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QN	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
				(iii)		
				F126={1,2,3,6,7,9,14,(18),21,42,63,126}		
				F90={1,2,3,5,6,9,10,15,(18),30,45,90}	M1 M1	
				F72={1,2,3,4,6,8,9,12,(18),24,36,72}	A1	A1 (0w-1) For missing more than two factors on each (F126, F90, F72)
				OR		
				Common Factors={1,2,3,6,9,(18)} (M1)		
				GCF is 18		
				The largest number of pupils is 18 ✓ (A1)		
24b				126 ÷ 18 = 7 ✓	M1	For correct working
				= 7 groups ✓	A1	For 7
25 (a)	G·C	C	P·7			
				(i) $p+70^\circ=130^\circ$ ✓	M1	For the formation of correct equation
				$p+70^\circ-70^\circ=130^\circ-70^\circ$		
				$p=60^\circ$ ✓	A1	For 60°
				(ii) $p+50^\circ+70^\circ=180^\circ$ ✓ (M1)		
				$p+120^\circ-120^\circ=180^\circ-120^\circ$		
				$p=60^\circ$ ✓ (A1)		

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Q	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
				(iii) $P+70^\circ+50^\circ+50^\circ+130^\circ = 360^\circ$ ✓ (M1) $P+300^\circ = 360^\circ$ $P+300^\circ-300^\circ = 360^\circ-300^\circ$ $P = 60^\circ$ ✓ (A1)		
				(iv) $P+50^\circ = 110^\circ$ ✓ (M1) $P+50^\circ-50^\circ = 110^\circ-50^\circ$ $P = 60^\circ$ ✓ (A1)		
(b)				(i) $K+130^\circ = 180^\circ$ ✓ $K+130^\circ-130^\circ = 180^\circ-130^\circ$ $K = 50^\circ$ ✓	M1 A1	For Formation of Correct equation For 50°
				(ii) $K+60^\circ+70^\circ = 180^\circ$ ✓ (M1) $K+130^\circ = 180^\circ$ $K+130^\circ-130^\circ = 180^\circ-130^\circ$ $K = 50^\circ$ ✓ (A1)		
				(iii) $K = 50^\circ$ ✓ M1 A1 Alternate angles		
				(iv) $K = 50^\circ$ ✓ M1 A1 Corresponding angles.		
				(v) $K+60^\circ = 110^\circ$ ✓ (M1) $K+60^\circ-60^\circ = 110^\circ-60^\circ$ $K = 50^\circ$ ✓ (A1)		

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Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMM
24(a)	L	MC	C	P.5 (i) Mass in gm.		
				40 × 250g		
				10000g ✓	B1	For 10(
				1000g = 1Kg		
				1g = 1/1000 kg		
				10000g = 1/1000 × 10000 Kg		
				= 10 Kg ✓	B1	For 10
				(ii) 1000g = 1Kg		
				250g × 40 (10) / 1000g (1) ✓ (M1)		
				10Kg ✓ (A1)		
				(iii) 1000g = 1Kg		
				250g = 250/1000 Kg (1/4)		
				= 1/4 Kg ✓ (B1)		
				1/4 × 40 (10)		
				= 10 Kg ✓ (B1)		
(b)				(i) 1 packet takes 5 days		
				40 packets take 5×40 days ✓	M1	For Corre Work
				= 200 days ✓	A1	For 20 do

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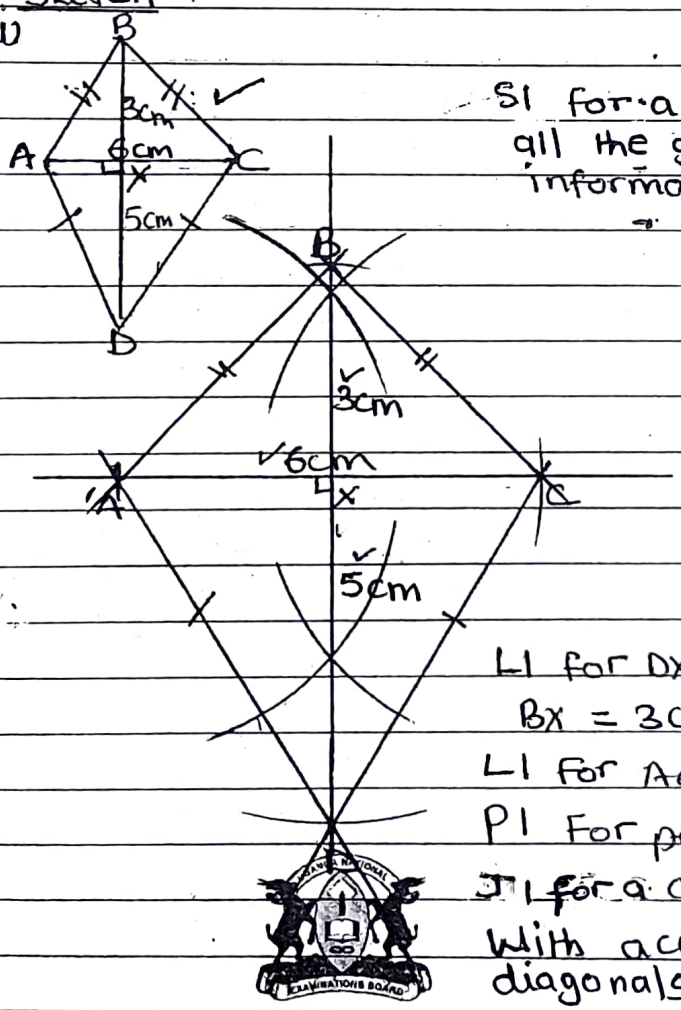
n	TOPIC	L	CLASS	SOLUTION	AWARD	COMME
				(ii) 5 days need 1 packet 1 day needs $(\frac{1}{5})$ packet ? need 40 packets $40 \div \frac{1}{5}$ $40 \times \frac{5}{1}$ ✓ (M1) $= 200$ days ✓ (A1)		
7	G·C	A	P·7	sketch (a)		



S1 for a sketch with all the given information.

L1 for DX = 5cm or BX = 3cm

L1 for AC = 6cm

P1 For perpendicular line

J1 for a complete Kite with accurate diagonals Constructed.

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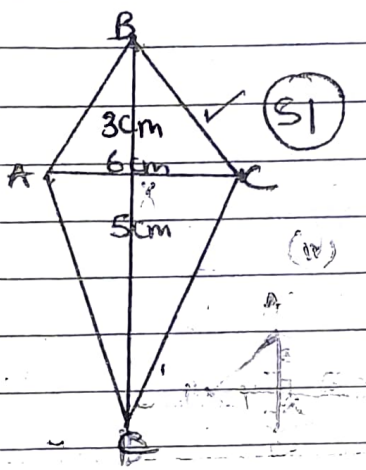
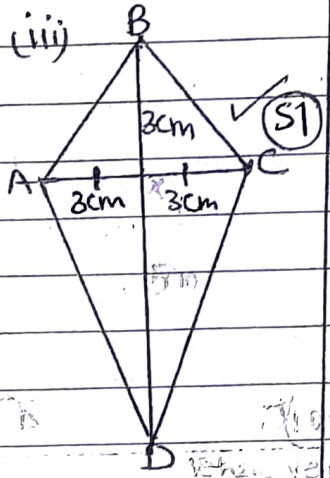
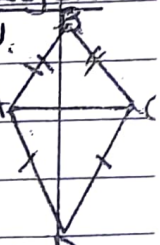
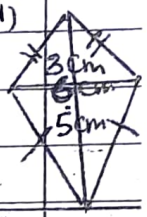
Qn	TOPIC	L	CLASS	SOLUTION	AWARD	COMMENT
				(ii)  S1 ✓ (iii)  S1 ✓		Reject (i)  (ii) 
28	Algebra	A	P.7	(i)		

	daughter	Man	sum
Now	n	4n	
6yrs ago	n-6	4n-6	48

✓

$(4n-6)+(n-6) = 48$ ✓ M1

$4n-6+n-6 = 48$

$4n+n-6-6 = 48$

$5n-12 = 48$

$5n-12+12 = 48+12$

$\frac{5n}{5} = \frac{60}{5}$

$n = 12$ ✓ A1

The daughter now is 12yrs.

For interpreting either or the table or first statement on the equation

For formation of correct equation

For 12

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Qn	TOPIC	L	CUS	SOLUTIONS	AWARD	COMMENTS

-28(a)

(ii)

	daughter	Man	sum
Now	$\frac{1}{4}K$	K	
6 yrs ago	$\frac{1}{4}K-6$	K-6	48

B1

$\left(\frac{1}{4}K-6\right)+(K-6) = 48$ M1

$\frac{K}{4} - \frac{6}{1} + \frac{K}{1} - \frac{6}{1} = \frac{48}{1}$

$4 \times \frac{K}{4} - 6\times 4 + K\times 4 - 6\times 4 = 48\times 4$

$K - 24 + 4K - 24 = 192$

$K + 4K - 24 - 24 = 192$

$5K - 48 + 48 = 192 + 48$

$5K = 240$

$\frac{5K}{5} = \frac{240}{5}$ 48

$K = 48$

Daughter's age $= \frac{1}{4}K$

$= \frac{1}{4} \times 48$ 12

$= 12$ yrs A1

(iii) Now

Total years

Daughter and father now

6+6 = 12

Current total age

48+12 = 60 years B1

Father	daughter	Total
4n	n	60

$4n + n = 60$ M1

$\frac{5n}{5} = \frac{60}{5}$ 12

$n = 12$ A1

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Qn	TOPIC	L	LAST	SOLUTIONS	MARK	COMMENTS
				(iv) Now Total years Daughter and father now (6+6) = 12 years Current total age (48+12) = 60 years ✓ (B1) Father : daughter 4 : 1 Total ratio 4+1 = 5 daughter $= \frac{1}{5} \times 60^{12}$ ✓ (M1) = 12 yrs ✓ (A1)		
(b)				4n − 6 4 × n − 6 4 × 12 − 6 ✓ 48 − 6 42 ✓	M1 A1	For Substitutio For 42
29	MONEY	C	P6	£1 costs ugsh. 4400 £600 cost ugsh. 600 × 4400 ✓ £600 cost ugsh. 2,640,000 ✓	M1 A1	For multiplicatio For ugsh 2,640,00

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Qn	TOPIC	L	CLASS	SOLUTIONS	AWARDS	COMMENTS
29(b)				US $1 costs ug sh. 3900		
				US $ 200 cost ugsh. 3900×200 ✓	M1	For multiplication
				= ugsh. 780000 ✓	A1	For 78000
				Ksh 1 costs ugsh. 26		
				ugsh. 780000 cost $\frac{780000}{26}$ ✓	M1	For division
				= Ksh. 30000	A1	For 30000
30	FRAC.	C	P.7	(i)		
				In 1 day first worker digs $\frac{1}{6}$ ✓	B1	For $\frac{1}{6}$ or $\frac{1}{3}$ or 6×3
				In 1 day second worker digs $\frac{1}{3}$ ✓		
				In 1 day both workers dig: $\frac{1}{6}+\frac{1}{3}$		
				$= \frac{1+2}{6}$		
				$= \frac{3}{6}$ ✓	B1	For $\frac{3}{6}$, $\frac{1}{2}$, $\frac{9}{18}$ or 6÷3
				No. of days taken:		
				$1 \div \frac{3}{6}$ ✓	M1	For division
				$1 \times \frac{6^2}{3}$		
				= 2 days ✓	A1	For 2days
				(ii) $\frac{\text{Product}}{\text{Sum}} = \frac{6\times3}{6+3}$ ✓ (B1) ✓ (B1) (M1)		
				$= \frac{18}{9}$		
				= 2 ✓ days (A1)		

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Nr	TOPIC	L	CLASS	SOLUTIONS	AWARD	COMMENTS
				(iii) $1 \div (\frac{1}{6}+\frac{1}{3})$ B1 ✓		
				$1 \div (\frac{1+2}{6})$		
				$1 \div \frac{3}{6_2}$ ✓ B1 M1		
				$1 \div \frac{1}{2}$ ✓ M1		
				$1 \times \frac{2}{1}$		
				$= 2$ days ✓ A1		
				(iv) 		
				3 parts rep. 1 day		
				1 part rep. $\frac{1}{3}$		
				6 parts rep. $\frac{1}{3_1} \times \frac{6^2}{1}$ ✓ M1		
				$= 2$ days ✓ A1		
2(b)				(i) $(2 \times 15000)2$ ✓	M1	For correct working.
				$= Sh\ 60000$ ✓	A1	For Sh 60000
				(ii) 1st Worker		
				Sh 15000 × 2 = Sh 30000		
				2nd Worker		
				Sh 15000 × 2 = Sh 30000		
				Sh 30000 ✓		
				+ Sh 30000 M1		
				Sh 60000 ✓ A1		

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Qn	TOPIC	L	CLASS	SOLUTIONS	AWARD	COMMENTS
				(ii) Goats Sheep		
				190° ✓ (B1) 80°		
				190° − 80° = 110° ✓ B1		
				$\frac{11\not{0}}{36\not{0}}$		
				11 parts rep. 11		
				1 part rep. $\frac{11}{11}$		
				36 parts rep. $\frac{11}{11}$ × 36 ✓ (M1)		
				= 36 ✓ animals (A1)		
				(iii) Goats = 3r + 40°		
				= 3 × 50° + 40		
				= 150° + 40°		
				= 190° ✓ (B1)		
				Sheep r + 30		
				50° + 30°		
				= 80°		
				190° − 80° = 110° ✓ (B1)		
				Let the number be y		
				$\frac{110°}{360°}$ × y = 11 ✓ (M1)		
				360° × $\frac{110y}{360°}$ = 11 × 360°		
				110y = 11 × 360°		
				$\frac{110y}{110}$ = $\frac{11 \times 360}{110}$		
				36 ✓ (A1)		

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Qn	TOPIC	C	L	CLASS	SOLUTIONS	AWARD	COMMENTS

(iv)

goats	sheep
$3r + 40^\circ$	$r + 30^\circ$
$3 \times 50^\circ + 40^\circ$	$50^\circ + 30^\circ$
$150^\circ + 40^\circ$	80°
190° ✓ (B1)	

$190^\circ - 80^\circ = 110^\circ$ ✓ (B1)

$11 \div \frac{110}{360}$ ✓ (M1)

$= \frac{1}{11} \times \frac{360}{110}$

$= 36$ animals ✓ (A1)

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